DOCUMENT RESUME

ED 348 955 IR 015 617

AUTHOR Piotrowski, Susan M.
TITLE Computer Training: Pathway from Extinction.
PUB DATE 1 May 92
NOTE 16p.
PUB TYPE Information Analyses (070) -- Viewpoints (Opinion/Position Papers, Essays, etc.) (120)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Computer Assisted Instruction; *Computer Literacy; Elementary Secondary Education; *Inservice Teacher Education; Literature Reviews; Postsecondary Education; Preservice Teacher Education; Workshops

ABSTRACT

Computers are so inherently necessary in this day that lack of computer skills is analogous to the absence of such basic knowledge as reading and mathematics. Computer training for classroom teachers is not only a good idea, it is vital to their success in the classroom and to their students' success in life after they finish school. Computer skills are not limited to the hardware and software of the computer, but must also include values, morals, and ethics. Several arguments against computer training are raised: computers are not that important and students can learn about them on their own; technology is rapidly changing and any training will be obsolete or unnecessary; teachers who are anxious about using computers may become more anxious if training is a waste of time; and in these economic times, money should not be spent on computer training for teachers. However, an examination of the world as it exists will show the fallacies in these arguments. Unfortunately, most teachers have not been trained in computers in college and have not received any, or at least very little, computer training since starting their teaching careers. Ideally, the computer training workshop should last for two semesters and include several follow-up training sessions after teachers have practiced the skills they have learned. (Contains 12 references.) (ALF)

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Computer Training: Pathway from Extinction

Susan M. Piotrowski

Purdue University

May 1, 1992

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Computer Training: Pathway from Extinction

Introduction

While it is still possible for students to succeed in today's working environments without any computer knowledge, it is getting harder to do so. In the next five years, it will be almost impossible to find employment without some basic computer knowledge (Wagschal, 1984). While it will not be necessary for students to be experts in computers, they will need to know such basics as word processing, electronic mail, spreadsheets and data bases. In all likelihood, they will need to acquire these skills in schools. In order for them to learn these skills, teachers themselves must know and understand them so as to be able to pass them along to their students.

Unfortunately, most of our current teachers were not trained in computers in college and have not received any, or at least very little, computer training since starting their teaching careers. Their training needs to include both how computers work and the basic functions of a computer. Without this training, teachers will not be effective in the classroom and students will fail to obtain the skills they will need later on.

In addition, with the proper training, teachers can not only instruct their students in how to use computers, they will be able to utilize the computers in their classroom as a teaching aid. This type of aid can be especially useful

for enrichment or remedial work. Grade books and student files may also be kept on computers, thus eliminating much of the paperwork a teacher must maintain and file. Kept on computer disks, records and files are easily accessible, can be printed off if a copy is needed and take much less space to store.

What we need to do is to develop training programs for our teachers that equip them with the knowledge they need to teach students about computers and to integrate computers into their lessons. However, we need to make sure that the training programs we supply address the actual needs of the teachers. If it appears that the teachers need only factual knowledge about the computer and how it works, then we need to supply this. If, however, teachers also need understanding and familiarity to ease any fears or intimidations they might be feeling, these needs should be addressed as well. It is vital to the education of our children that our teachers are correctly trained in computers and this needs to be done now. If this problem is not immediately addressed, those students currently enrolled in school may miss out and may not be fully equipped for successful careers.

This problem of computer training for teachers is not only important because students with untrained teachers will be disadvantaged, its significance and long-term implications are much more extensive. It fundamentally deals with knowledge. Teachers require knowledge of a

particular subject or area in order to be in a position to instruct their students about this material. The students need this information in order to fully function in the world as it will exist when they enter the work force. Our world is changing and becoming increasingly technical. This technology includes computers. Without the knowledge of computers and all this entails, teachers will not be able to teach these areas to their students.

Imparting this knowledge is not the end. Teachers also need to know the ethics involved with the use of computers and the use of the information obtained from these machines. This area also suggests how vital it is to properly train our teachers. Neither of these are trivial problems and yet both need to be fully understood by our teachers. Both also need to be passed along to the students so we are not educating unethical computer users.

Bibliographic Essay

If the purpose of higher education is to prepare students for taking their place in a world (Dede, 1990) that is increasingly dominated by science and technology (Rusholme, 1974), it is up to the schools to make sure that they are keeping current with the rapidity of change. It is also up to the schools to make certain that they are fully preparing the student for these changes. In addition, academia has the responsibility of increasing the individual student's sense of "fate control" by providing him or her with a more

realistic understanding of the alternative futures that may confront him or her (Dede & Kauffman, 1974).

Technological capability may be the most important force in shaping the future from the present (Dede, 1978). If schools do not want to prepare students for a future that will have largely ceased to exist by the time they reach their most productive years, schools need to continue to look to the future, study it and prepare their students accordingly (Dede, 1978). Part of this schooling includes knowledge and use of computers. If we are to ready these students to take their place in our changing world, we must have teachers who are able to educate them for these changes. The schools and the teachers need to shoulder this responsibility as they have for other changes in curriculum.

Computers started to make an appearance in school classrooms in the early 1970s with terminals connected to a mainframe (Wilson, 1984). Later in this same decade, microcomputers became available (Wilson, 1984). Since then, computers have been playing an increasing role, and, whether we like them or not, are soon going to play a major role in our daily lives. This increase will create a need for teachers who have the necessary knowledge and skills to teach their students about computers.

Unfortunately, in today's current classroom, teachers are using computers only on a limited basis. Poor or limited training of teachers is at the heart of this problem (Glenn & Carrier, 1986). While most teachers (88%) have taken a

computer course, 60% feel the typical in-service course is unsatisfactory (Lent, 1991). If teachers do not have the knowledge and skills to integrate computers into the instructional process, they cannot be expected to do so (Glenn & Carrier, 1986).

If we are to have teachers who are both comfortable and competent with the use of technology in their teaching, more and better pre- and in-service training needs to be a priority (Hasselbring, 1991). These training programs must be developed to assist the teachers in moving from the awareness level to an instructional skill level (Glenn & Carrier, 1986).

The training courses offered to in-service teachers focus mostly on learning about computers, not learning how to teach with them (Hasselbring, 1991). Most of the time is spent on gaining the skills and confidence needed to "run the machine". Although classroom applications are included, they are usually of secondary importance because of the time needed to learn how to use the computer and selected software (Glenn & Carrier, 1986). While teacher technophobia is disappearing, high quality training is still in short supply (Lent, 1991).

Before teachers and administrators select and develop training programs, they must ensure that the technology will support the curriculum and not exist strictly for its own sake (Parker, 1986). To be responsive to the needs of different teachers interested in computing, a training

program should address all of the needs of those participating in the training.

One way to address these needs is to have at least two separate programs. A beginners' program that allows the teachers to master basic competencies in computing could help teachers who lack prior knowledge or experience. Unequipped and uniformed teachers usually demonstrate anxiety and fear, and frequently hostility to the in-service program and the technology. Leaders of these programs must continually remind themselves about the need for patience and empathy in dealing with first time users. An advanced program could allow teachers who have been introduced to computers to develop a systematic integration of the technology into their classrooms (Carrier, Glenn & Sales, 1985). In addition, the advanced program could address specific needs for specific subject areas.

To use this technology effectively, all teachers need to acquire some general knowledge about computers and their uses: programming, word processing, materials generation and record keeping. However, they must also be informed of computer applications that are more specific to their teaching area and how to integrate these applications into actual lessons (Lehman, 1986).

Counter Arguments

One objection that could be raised against the training of teachers is that computers are not all that important and

what little the students need to know about them can be picked up either at home or from other students. This objection, however, fails to even come close to the world as it already exists. It also fails to take into account that computers will be playing more of a role in our lives in the future and not less of one.

Computers now replace cash registers in stores and typewriters in offices. They are used for electronic mail both in homes and offices, as directories in malls and stores, as board games for children and for ordering catalog products in stores. In order to not have our students at a disadvantage, they need to acquire these skills and it is up to our teachers to supply them. If our teachers are to supply these skills, they will first require computer training because they have not been trained or have been poorly trained in this area. They need this training before they can pass on computer knowledge and skills to their students. These students need to know about computers in order to fully function in today's workplace. Lack of computer knowledge is tantamount to not being able to read, write or perform basic mathematics. It is no longer a question of whether computers will play a role in our lives, but how major a role they will play.

A second objection that could be raised on this subject concerns the training of teachers in today's technology. If the technology is changing so rapidly, why should money and time be spent teaching teachers on this technology when

there will soon be computers that are voice activated and more user friendly? This sounds like it might be a valid point. However, it only addresses the training issue from one side, that of learning a technology that will soon be obsolete. This is not the only side of the training that needs to be examined. Granted, teachers may take their training only to have the technology outdated six months later. This does not mean that their training is outdated. It only means that the technology they learned is outdated. The skills and knowledge acquired can be used to more quickly learn the new technology. While certain skills are applicable to only the current technology, most are general and can be applied to the technology as it changes. In fact, without these more general skills and knowledge, teachers would not be able to adapt to the newer, more user friendly computers.

Some people might suggest that if our teachers are truly anxious about learning computers, the training is a waste of time for them and might actually make them more anxious rather than less. What we really should be doing is only training those teachers who have a desire to learn about computers. While this might seem like a good idea on the surface, when we look deeper, we see that only having some teachers training on computers results in students only being able to have access to a computer a couple of hours per week. Looking at this same point from the teacher's point of view, if they receive training from someone who

knows they are anxious and takes this into account, they almost always find out that computers are indeed easy to use and pose no threats. In fact, teachers who have been anxious about learning how to use computers and have overcome this anxiety can more easily relate and therefore help their students who may feel anxious.

With a slow economy, there are those people who would say these are not the times to be spending money on teaching computers to our teachers. They feel that this type of spending should wait until there is extra money for it. The point these people are missing, however, is that money is not the issue. The issue is making sure that our children receive the education we want them to have and that they deserve. There will never to be extra money, per se, in the school's budget. If an item, in this case in-service training, is important, then the money for it must be found. What we must keep in mind is that our children's education should not be neglected. We need to make sure the money we spend is going as far as it can and for necessary items. Without computer training, a necessary portion of their education will be overlooked.

Discussion

While some of the major points of contention have been addressed in the previous section, all of them have by no means been handled. If this were to be attempted, this

paper would never end as more arguments could always be found. Hence, only the major ones have been dealt with.

In-service teacher computer training has been discussed in great detail as have the needs for such training. What has not yet been addressed is what this training should consist of, how it should be implemented and what the philosophical importance is. Assuming that everyone is now in agreement that some sort of training needs to be provided, how and what type of training will now be examined.

It is not enough to send our teachers off to a day or two workshop and then expect them to be able to return to their classrooms and know everything there is to know about computers. Nor is it reasonable to expect them to function without support after one training session. The training needs to be structured in such a way as to supply enough of the basics so that the teachers can return to their classrooms and apply what they have learned. After they have had a chance to actually practice their skills and see what problems they are encountering, they would return for the next step of instruction. At this point, problems and questions could be dealt with and a start made with some of the less basic material. The ideal training situation would have several of these "follow up" training sessions. After the last of these, the teachers would work in their classrooms with this new information for the rest of the semester. If at any point during the semester they needed

additional assistance, they would be able to call the training instructor to arrange an appointment. After the semester has been completed, the teachers would reconvene for another class. Questions and problems would again be discussed.

These first workshops would be conducted during the fall semester. Once the second semester began, the teachers would be ready for the more advanced training. These sessions would be structured in much the same way as the beginning ones. This would allow the teachers to acquire their training over the whole semester, with actual classroom practice interspersed with the instruction.

Once the teachers have learned the mechanics of working with computers, their job has scarcely begun. They have to insure that this knowledge and these skills are passed along to their students. However, raw knowledge is not the only educational element that teachers must transmit. They will also be passing along their values and ethics where computers are concerned. Value transmission is not only inherent in how teachers teach, it is also found in the way they treat a variety of instructional situations, e.g., how they deal with students' data, with public data bases and how they handle classroom problems of data sharing or copying.

By learning how to work with computers, students open a whole new realm of ethical considerations. The teachers must ensure that these students know that things such as

plagiarism and stealing of data from other data bases or diskettes is still stealing and unethical. After finishing school, these same students must be aware that there are limits as to what kind of information they should have access to (or let others have access to if they are in charge of keeping the data secure), what kinds of information should be stored and who should be allowed access to specific data. Other issues and ethical dilemmas will also arise as new areas for computers are uncovered with increasing frequency. If our present day students are not trained to be ethically sensitive, how do we expect our computer users of tomorrow to be any better?

Conclusion

Training for our teachers is not only a good idea, it is vital to their success in the classroom and their students success in life after they finish school. Computers are so inherently necessary in this day that those who do not have computer skills will be disadvantaged. Lack of computer skills is analogous to the absence of such basic knowledge as reading and mathematics. These skills are not strictly limited to the hardware and software of computers. They must also include values, morals and ethics. Issues that have already surfaced include such questions as "Who should be allowed access to certain kinds of information?", "What kinds of information should be stored?", "Can information be made public and sold as a commodity?" and "What penalties

should be imposed for stealing information or destroying data?". It is certain that as computers are used in more fields, ethical considerations will only grow. Today's students must have a firm foundation on which to build so as to be able to address these types of issues.

Future social philosophical issues will also have to be addressed by today's students. As computers become more prevalent, should care be taken so as not to have a future society that discriminates on the basis of whether or not a person knows how to use a computer? Will the extraordinary abundance of information so readily available create problems in and of itself? Will the rapid use of information lend itself to even speedier technological obsolescence? Will this obsolescence create problems with the social lag that invariably arises out of technological innovations? How can it be ensured that computer information is only used "correctly" and who determines what "correctly" entails?

All of these and more are issues that need to be addressed. These are not trivial considerations, they bear further examination. If they are not dealt with now, our society will not be able to resolve them in the future.

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